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THE TECH.

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BOARD OF EDITORS.

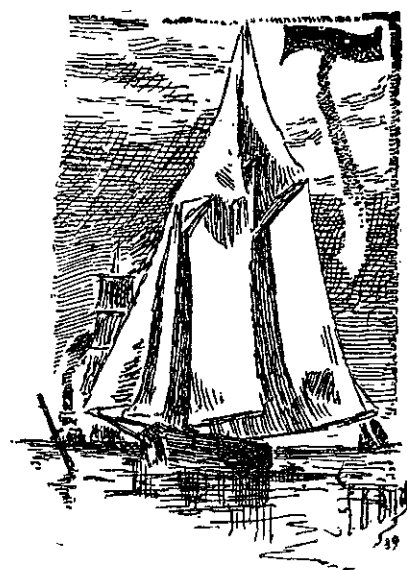
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THE TECH takes pleasure in announcing to its readers the publication of a number of articles, beginning with this issue, to continue through the year, on the courses of study offered by this Institute. The development, aims, and advantages of the several departments will be presented by the instructors in charge in successive papers of the series. Alumni as well as undergraduates will find these contributions of especial interest.

The opening paper, on the Course in Civil Engineering, by Prof. Geo. F. Swain, appears on another page of this number. Members

of Course I., and those who intend to take up that course next year, will find this article valuable and instructive, while students in other courses will be equally interested in those that are to follow. THE TECH congratulates itself as well as its readers on this noteworthy addition to its columns.

THIS number of THE TECH is issued at one of the two busiest seasons of the Institute year. The influenza is hardly through with its work of devastation before the apparition of the Semies rises to take its place. It is a hard choice of evils bodily and intellectual. The regular work of the term is over, and those who have but a few months before them can already see the conclusion of what seems, in retrospection, a short four years. For others—a much larger number—the long struggle is but just begun. To the former, examinations are an oft-told story, not so much feared as of old, but commanding no less attention; to the latter, they come with all the terrors of the unknown, enhanced by vivid anticipation.

The examinations in themselves are hardships without the aggravation of their grim reality by this paralyzing fear of the result. The more you allow yourself to be overcome by this nervous dread, the worse off you find yourself when you sit down to the examination paper before you. Enter the lists with a bold front and a resolve to come out with flying colors. Assurance may contribute much to your success. If, however, failure rewards your efforts, remember that there is still a chance to retrieve your fortunes. Go in and win, and may the marks you receive more than satisfy your expectations, and bring you back next term in triumph.

HERE is usually more or less trouble and difficulty experienced in the endeavor to raise sufficient money to pay the expenses of the football team; this year the subscriptions came in even more slowly than usual, and the game with Williams was nearly lost by default, in consequence. Any arrangement that would make the men here at Tech. more willing to subscribe toward the support of the team would be of great advantage, and it appears to us that the publication of the manager's accounts might do this. A statement of expenditures for athletics is published at nearly every college of average size in the country; it is not the custom here, but would it not be well to begin to make it so? It is by no means too late to publish the accounts for last year, and if the practice were once started it would probably be continued. The subscriptions would be tabulated by classes, and we could then see just where the blame for the poor support of the team ought to fall. If the football management should adopt this suggestion now, it might be much to the advantage of the team next year.

IT occurs to us that the sense of humor of the persons who persist in removing signs and notices from Rogers Corridor, is very much perverted. The practice of "ragging" signs from tradesmen's windows and other public places is beyond our province to deal with, but we cannot pass over the business of this kind that is going on under our eyes. The various bulletins and circulars that are placed in the corridors by the different organizations, are intended for the information of all students interested; they may be ornamental additions to individuals' rooms, but they do not serve their purpose in that use. There is an old maxim concerning honor among a certain class of society that seems to fail of application here, for so full of glory has this plundering become, that placards are removed indiscriminately. It is easy to see the annoyance

and inconvenience to which this custom gives rise. We trust that calling general attention to its existence will suffice to put an end to it.

IT is the intention of the management of the eleven to begin preliminary practice in the gymnasium the first part of next term. A tackling dummy will be provided, and the men set to work at passing and tackling. It is expected in this way to accomplish a great deal that can only be partially attempted during the limited time that is available in the fall. Every member of the team will be expected to take part in this gymnasium training, but it is especially important that new men who intend to play with the eleven next season, should attend regularly to this practice. It is our opinion, though we may be mistaken, that the indoor work performed by former elevens has not been of much account; but with the vigorous co-operation of those who are interested, there is no reason in the present instance why it should not be a success.

ONE look at our army of grinds enables us to account for the low state of the city's gas receivers, and to imagine the probable length of the gentle landlady's face when she sees the remarkable size of the quarter's bill. But gas or no gas the grinding must be done,—so much the worse for those who have to do it,—for an examination is no respecter of persons, and demands its quota of toil from all those that undergo its trials.

As to all things, there is an end to our semi-annual tribulations, whatever the degree of demoralization in which we reach it. Our success or failure depends largely on what we have been doing during the past fifteen weeks, partly on the severity of the ordeal that descends upon us. Whether the result is a triumph or the reverse, we are all entitled to the benefits of ten days' idleness, which we can proceed to enjoy without regard to examinations, recitations, or lectures.

IT is to be regretted that the Boston Athletic Association's sparring, wrestling, and fencing meeting came as it did, in the midst of our examinations, for had it been a little earlier we should have made some entries. Although we were unfortunate at that time, there is a better outlook for the open handicap meeting to be held in Mechanics' Hall, February 15th, when we shall probably make six or more entries. This is encouraging, as heretofore Tech. has not gone into any open meetings. Now that the ice is broken, we expect great things for the future.

The training that our athletes will have for this meeting will put them in good condition for our open spring meeting, which takes place in March, and which in the past has been noted for its lack of Tech. entries. But this year, as our athletics are on a flourishing basis, we will look for a more evenly divided programme.

THE TECH has received articles for publication more or less frequently from the members of the upper classes, but contributions from '93 have been noticeable by their absence. We make no appeal, O Freshmen, to your patriotism or your generosity, knowing that your liberal allowance of each is, before now, sacrificed to the pressure of your multifarious duties in connection with the routine work of the Institute, but we would suggest that it is to your interest to remedy the present state of affairs. THE TECH hopes to be able to make additions to its staff from the ranks of your class, but unless enough literary material is submitted for an estimate of your writers' abilities, the choice will necessarily be indefinitely deferred.

We have no hopes that you can manifest your talents as contributors until the turmoil of the examinations is over, but the leisure of the ten days succeeding offers the opportunity for unlimited writing. Improve the chance, and favor us with the result of your efforts.

THING that we are sorry to mention, but which is too well known, and, unfortunately, too common to let pass, is the occurrence of thefts in the Institute buildings. Students who have left property in the coat rooms have met with losses of money or clothing of more or less value. It is hard to prescribe any remedy for this evil, for no suspicion can be attached to any persons connected with the Institute. The fact that this thieving exists is one of too much importance to the reputation and *morale* of the Institute to be neglected by the authorities.

The Institute provides a room where articles can be checked, and does not hold itself responsible for any losses encountered by the students by not availing themselves of it. We need not say that this protection is rendered useless in many cases where its use is not practicable. Those who desire to keep possession of their personal property should not take any chances, but keep it where there is no danger of its being appropriated. At present eternal vigilance is the only safeguard of one's valuables.

THE column heading of THE TECH under which used to appear occasional "Communications," is growing dusty from disuse. Every one is too satisfied or too busy to need expression for his grievances. Happy Institute where no improvements can be suggested, and no failings pointed out. Our columns will still be at the disposal of the students, however, whenever cause for dissatisfaction shall be given to any one.

The space mentioned is not, however, reserved for nothing but growling. Matters of general interest by the undergraduates and letters from the alumni have equal right to occupy it. We desire to keep it filled with the expression of the students' opinions, and to this end invite an overflow of contributions on any or all subjects. If you have something to say, do not wait for a more special invitation.

A Double Coincidence.

AFTER the Thanksgiving recess I had occasion to change my lodgings, and removed with my belongings to a quiet side street at the South End. Preferring seclusion for the studying that I had in mind to accomplish to the pleasures of sociability, I had chosen to room alone, and at the beginning of December found myself in new quarters, the centre of an assortment of trunks, boxes, and two years' collected bric-a-brac, which had just been left by the expressman. The setting in order of this chaos, and the arrangement of my trophies according to the approved rules of college room furnishing, occupied my extra hours for two or three days; then, when I had taken a general satisfied view of my surroundings, I was at liberty to turn my attention once more to the world which lay without the four walls of my domicile.

The idea of removing from the particular locality given up for eight months of the year to the occupation and ownership of the Tech. student had caused me some misgivings, which I found justified by the event. One does not pass so many months in the heart of studentdom, without finding on deserting it that its customs and comradeship are necessary to his enjoyment. I had not put myself beyond reach of communication with my old associates, however, and as my isolation had by this time become unendurable, I resolved to remedy it by looking up a friend whom I had for some time neglected. His name for the purposes of this narration shall be Dick or Richard, at the reader's option.

The walk to his boarding house was a long one, and as the weather was typical of the Boston season, I was glad enough to reach my destination. My welcome was cordial, almost effusive. Dick grasped my hand as if I was a long-expected arrival, divested me of my overcoat before I could respond to his hearty reception, ensconced me in the best easy-chair before the open fire, and insisted on my lighting a cigarette before entering on any

conversation. The cause of this manifestation of interest I was at a loss to explain. Dick had the reputation of a quiet fellow of limited acquaintance, who entertained few callers. I had known him well enough ever since we had been Freshmen, without being especially intimate. Without troubling myself with reasons, however, I made myself at home, and awaited developments. The explanation was not long in coming; before I had finished the first of his cigarettes Dick informed me, in a confidentially mysterious manner, that he had something to tell me at which, he said, I might be rather surprised. I confess that I was when he told me that he was engaged. The news was so unexpected, and in every way so out of bearing with my idea of Dick, that I started on a hearty laugh, but recollected myself sufficiently to change my untimely mirth to congratulations.

The remainder of my stay was devoted to a eulogy of the lady's perfections, to which I was but an inattentive listener. Dick descanted at length on her eyes, her smile, her voice, her wit, and every quality of woman-kind in the lover's catalogue of virtues, of each and every one of which his fiancée was the charming possessor. My part of the conversation was sustained with little difficulty, as Dick's eloquence once unloosed needed no encouragement. At length, as the hour was growing late and Dick showed no signs of wearying, I interrupted him by throwing the remains of my seventh cigarette into the fire and rising from my chair. Dick professed himself disappointed that I could not stay longer, received my dutifully repeated congratulations gratefully, and promised to send me cards when the happy time arrived. I left him smiling at his good fortune, and made my way back to my apartments.

The next day as I sat in my room making pretences at study, but thinking in reality that anything would be more interesting than the book in my hand, I happened to glance out and across the street until my attention was

arrested at the second-story window of the house opposite. I had looked at this window twenty times before without especial notice, but now I saw behind its panes a young lady, engaged like myself in reading, and by sympathy of occupation, or some other occult reason, my attention was at once strongly attracted. Availing myself of a pair of opera-glasses, so strong was my interest, I could see that she justified more than a glance of admiration. She was not more than eighteen years old, and seemed, at first sight, a most pleasing relief to the monotony of my situation. Her eyes were directed to the pages of her book, but if they did not belie the coquettishly demure expression of her face, I was persuaded that nearer acquaintance was desirable. She paid no attention, however, to my overtures toward communication, of which, however I do not think she was unmindful, and after a few minutes left her place by the window. I acknowledged defeat in the first attack, and promising myself better success next time, re-turned to the perusal of my book.

I was not so absorbed, however, as to prevent me from keeping informed of what was going on outside. I was repaid, after the elapse of half an hour, by seeing my unknown neighbor appear at her door tastefully equipped for shopping. The umbrella that she carried particularly interested me. In the first place, it was of a bright red color; and a scarlet umbrella is of itself a startling novelty on the streets in midwinter. But aside from the first impression of astonishment, there seemed something familiar in its appearance. Using my opera glasses to advantage, I found that my suspicions were not unfounded. Hanging on the walls of my room was the exact counterpart of the umbrella in the hands of my friend opposite. Mine was a souvenir of the last summer's campaign, taken in reprisal from a particularly intimate acquaintance, and placed among the motley furnishings of my study. A misunderstanding with its former

owner caused me to regard it with small favor, and I had hung it in its place with much more regard for its decorative capacities than for the recollections associated with its highly ornamental handle and brilliant covering. Now, by a rather uncommon coincidence, it was duplicated in other hands, and its counterfeit had acquired a new attraction in the hands of its fair owner.

She had descended the steps of her house and crossed the street. A wagonful of coal was being unloaded on the sidewalk by a grimy coalheaver. As he stood aside to let her pass, she rewarded him as well as me, who was looking on, with a smile that was all that was needed to complete her conquest. I stood looking after her until she was out of sight, turning over in my mind expedients to bring about a meeting.

It was about two hours after, as I stood in the porch drawing on my gloves preparatory to a walk down town, that I saw the object of my surmises approaching on the same side of the street, her hands occupied with a number of bundles and the umbrella carried under her arm. I naturally waited where I was until she should go by. She had hardly passed me before she slipped on a piece of frosty pavement; and although she saved herself from falling, the bundles scattered in all directions, and the gorgeous umbrella, before I could come to the rescue, fell against the newly painted railing in front of the house. I hastened to render any assistance possible, and gathered up the débris, last of all that umbrella. As I looked at its ruined condition—for the paint had streaked one side hopelessly—a sudden idea came to me to establish myself in her good graces if she would permit me, by substituting the umbrella which was mine for the one that been spoiled by the accident. The deception was innocent enough; she need be none the wiser, and the injured article, placed with the bad side to the wall, would satisfactorily fill its predecessor's place as an ornament. I immediately proceeded to

put my scheme into execution, and begged her to allow me to repair the damage done to her umbrella, urging that my fence was the cause of the catastrophe, and inventing on the spot a remarkable story of my abilities in the way of removing paint from red silk. At first she demurred at my proposal; but as I would not be refused, after some hesitation she acceded, and asked me, if it was not too much trouble, to call when the task was finished, and I carried the umbrella upstairs in triumph.

Late in the afternoon I called. My enchantress came to the door in person, and I presented the substituted umbrella. She was quite enthusiastic over the rejuvenation that had been wrought, and thanked me warmly for my services. Still talking over the little misadventure we wandered into the parlor, where, somewhat to my astonishment, I found myself established like an old acquaintance in the course of a few minutes, and I admit that I did all in my power to fill the position satisfactorily. We talked upon the well-worn subjects, the weather, the theatre, the Institute, where, by a little equivocation on my part, we found an exceedingly large number of mutual acquaintances, and had by no means reached the end of our list of topics when tea was announced.

I was introduced to a middle-aged lady, whom I judged was her aunt, and invited to stay. The complete captivation to which I was now subject prevented my refusing, and I stayed. After tea, likewise, I did not take my departure. She did not seem surprised at the duration of my call, but became every moment more entrancing. I noticed a guitar in the room, and at my solicitation she took it up and sang to her own accompaniment. I played somewhat myself, and we improvised some duets,—fearfully sentimental things, that at another time I should have regarded my participation in as evidence of imbecility. Now nothing seemed more appropriate in the dimly lighted room, under the bewitchment of her presence.

Finally the music ceased. As if by a common impulse we both rose and strolled toward the window. The moon was shining without, and for some moments we watched it without speaking. I clasped her hand, which was not withdrawn, and as the radiant moonlight fell upon her half-averted face, I felt that no more lovely picture had ever been presented to my vision. What thoughts were passing in her mind I could not tell; but she cast down her eyes and sighed. I drew her toward me until I held her in my arms, and she did not resist the embrace. I do not care to be held accountable for what I would have said in another moment if our rapture had not been interrupted by the approach of a man, who at that moment turned the corner of the street and came toward us. Naturally I deferred my declaration until he should have passed. But the stranger paused before the door of the house in which we were, and slowly began to ascend the steps. She saw him, gave a little frightened scream of "Richard," and tore herself from my arms. At the same moment I too recognized *her* Richard as *my* Dick. Abruptly excusing myself I seized my coat and hat, precipitately descended the stairs to the basement, and made good my escape from the lower hall as Dick was entering above, berating myself for not remembering that, in his panegyric of the night before, Dick had laid especial stress on her affectionate disposition.

A Close Distinction.

When Jack and Nell were lovers fast,
She asked him if his love would last;
He answered her, in fond surprise,
That there could never doubt arise.

But Love had arrows still to spare;
Jack found a maiden far more fair,
And quite forgot, beneath her spell,
The promise he had made to Nell.

Though Nell had fears, she trusted yet
Until the smiling pair she met;
And then she owned, with feeling sighs,
That she could never doubt her eyes.

M. I. C. DEPARTMENTS.

I. Civil Engineering.

WHAT is civil engineering? What fields does it cover? For what employments does Course I. fit a young man? These are the questions to which it will here be attempted, at the request of the editors, to give brief answers.

Civil engineering is properly the parent from which the other branches of engineering have sprung. It began when the first rough road was located and built, when the first rude bridge was swung, or when man first attempted to combat the forces of nature or to divert them to his own ends. Long before the mighty power of steam was known, or the wonders of electricity dreamed of, roads and bridges had been built, cities supplied with water, the courses of rivers regulated, artificial canals constructed, and lands embanked from the sea. In those days the men who built and carried out such works were called simply engineers, or sometimes architects,—this term being often applied to anybody who built, whether it were a cathedral, a bridge, or a canal lock. The early works of engineering in civilized countries were largely in connection with improved means of communication,—that is, roads, bridges, and canals; and the first and greatest engineering school of France was named, and is still called, the “School of Bridges and Roads.” But the field of engineering covered all branches of construction except that of buildings, which soon became the special field of the architect.

As the power of steam became known, and began to be applied in engineering and in the arts, it often happened that the same men who carried out works of transportation or of water supply, also engaged in the development and application of machinery. The field was comparatively so limited that a man could master and keep pace with all these branches,—could build roads, canals, and railroads,

manufacture locomotives, advise in the construction of mills, and engage in all kinds of engineering work. In fact, the engineer was of necessity obliged to keep abreast with the advances in the use of steam, since it was particularly as applied to his own special field that the steam-engine found some of its most important applications. But soon the enormous developments in the use of steam and machinery made it no longer possible for one man to keep pace with the progress of all branches of the profession, and rendered necessary a class of engineers specially familiar with steam and its applications to machinery of all kinds. Thus the profession of the mechanical engineer was born. In the same manner, and not very long ago, the profession of the electrical engineer has grown out of that of the mechanical engineer; while that of the mining engineer has been a gradual outgrowth of engineering and chemistry.

The field of civil engineering is thus very broad,—so broad that in these days a man soon finds himself a specialist in one of its branches. Generally speaking, its chief characteristic is that it deals principally with *structures* as contrasted with *machines*; with *rest* as contrasted with *motion*; with *statics* as contrasted with *dynamics*. The mechanical engineer is sometimes called a *dynamical engineer*; and from this point of view the civil engineer might be called (though I believe he never has been) a *statical engineer*. In Germany, the mechanical engineer is a “*Maschinen-Ingenieur*”; the civil engineer a “*Bau-Ingenieur*.” But this distinction is only a general one; for the study of the motion of water, and its flow in rivers, pipes, and artificial channels, belongs properly to the field of the civil engineer; and, moreover, every civil engineer has frequently to do with machines and engines, and must have some knowledge of them, just as the mechanical engineer has frequently to do with structures and with the flow of water, and must have some knowledge of those subjects.

Briefly, then, civil engineering includes: (1) the location and construction of roads, streets, railroads, and canals; (2) the design and construction of works for water supply and sewerage, the regulation of rivers, construction of harbors and docks, the development of water-power, the drainage and irrigation of land, etc.,—all included under hydraulic and sanitary engineering, and based largely on a study of theoretical hydraulics and of hydrology; (3) the theory and design of the various structures necessary in the construction of the works referred to, including bridges, roofs, arches, dams, and other structures of stone, wood, and iron; (4) the science or art of surveying, which is the basis of all engineering field work, and which, when applied to large areas, becomes the science of geodesy, taking account of the curvature of the earth's surface.

Course I. aims to give the student such a training in the fundamental principles on which civil engineering is based, that he may be equipped to enter upon the pursuit of the profession, and with the aid of which he can rapidly acquire the practical knowledge which can only be gained by experience; a training which may serve as a foundation on which he may build quickly and safely, and as high as his talents and his perseverance may take him. The civil engineer requires for his foundation, first, a thorough training in mathematics, mechanics, and physics, and a knowledge of physical geography and geology; second, a sound knowledge of all branches of surveying, both theoretically and practically; third, some knowledge of the principles of mechanism, and of the steam-engine; and, fourth, a thorough training in the application of the principles of mathematics, mechanics, and physics to the theory and design of engineering structures, the flow of water, the location of roads and railroads, and the various problems with which the engineer has to deal. And beyond giving the student *knowledge*, the course aims to teach him two things impor-

tant above all others,—to *learn* and to *think*; for without these he will never be able to grapple with new problems. The successful engineer, the man whose services are really valuable, is not he who can simply do again what he has once been shown how to do, but he who can meet emergencies when they arise, and solve new problems through a clear perception of the principles upon which they depend.

Equipped with such a training, a young man should be able not only to engage in some branch of the profession, but to enter upon various commercial pursuits connected therewith, as in the manufacture of certain materials of engineering, in the construction of city pavements, in the manufacture of railroad appliances of various kinds, such as signals, brakes, etc., and in other directions. He should also have an advantage in certain kinds of administrative work, as in connection with railroads and water works. Railroad managers and superintendents are frequently civil engineers; and considering the advantages of a good engineering training in all kinds of railroad work, this will probably be more frequently the case in the future than it is now or has been in the past.

Finally, as to the opportunities for young men graduating from Course I. In civil engineering, as in every other occupation, there are, of course, variations in activity; some years are years of unusual activity in construction, while financial conditions may sometimes lead to periods of depression. Considering the breadth of the field, however, and the opportunities in the maintenance of existing works as well as in the construction of new ones, there appears to be ample certainty that a young man well trained in civil engineering will soon find some occupation. It may only be said that during the past five years the demands upon the department for graduates have been far above what could be supplied,—even to over double the number of graduates at disposal, and that applications are already being made for graduates in 1890.

GEO. F. SWAIN.

A Summer's Tale.

She was a quite romantic girl,
Her face with beauty glowing;
I knew she liked me rather well,
And asked her to go rowing.
We slowly paddled down the lake—
She told, in accents mellow,
Of how a man a medal got,
For rescuing a fellow.

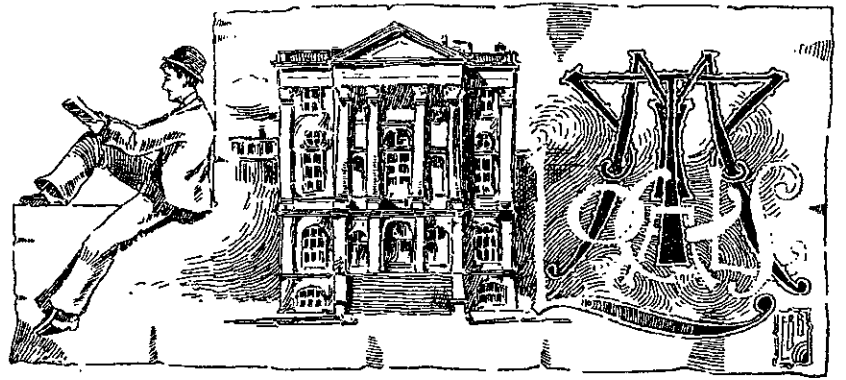
She wished that fate to her would send
A man with so much sand,
That, if she should fall overboard,
He'd bring her safe to land.
" 'Twas such a one," she mildly sighed,
" That she would dearly love."
(And love on her part meant, I knew,
A million, or above.)

I then resolved to win that girl,
(Likewise the shekels, too),
I could not swim—the lake was deep—
Near shore it shallow grew;
I'd row in close—upset the boat—
By accident, no more;
And then proceed to rescue her,
And bring her safe ashore.

We did upset. But, oh! ill luck,
My foot caught 'neath the seat,
The painter fouled around my neck,
My collar 'round a cleat.
I struggled hard, I heard a laugh,
At that I nearly swore;
At last I got untangled,—
And saw her wade ashore.

Since then I have not cared to row,
And small boats have eschewed,
Nor tried to raise a million
By any scheme so crude;
And when, by chance, upon the street
I meet that beauteous maid,—
I think of all I might have owned,
Had she not tried to wade.

THE next article in THE TECH's series on the M. I. T. Departments will be by Professor Lanza, on the Course in Mechanical Engineering. Extra copies of the numbers containing these articles as they appear can be obtained at MacLachlan's. They will be valuable for future reference and also to mail to those intending to pursue their studies at the Institute. The order in which they will appear has not yet been fully arranged, but will be announced hereafter.



How do the exams. strike you?

This is the last number of THE TECH this term.

The Catalogue may be expected before the end of the term.

The condition examination in Heat takes place Saturday, January 25th.

The football team will begin practice in the gymnasium the first of next term.

Professor Cross is delivering a course of lectures on Physics to the students of Boston University.

S. B. Sheldon, '90, has left the Institute to accept a position in an iron and steel works at Milwaukee, Wis.

At a meeting of the eleven held Saturday in 15, Rogers, H. Rice, '91, was elected sub-captain of the team.

Two hundred and fifty Springfield rifles have been received from the State for the use of the Corps of Cadets.

Rogers steps were very icy last week. The wooden treads that are usually put down have not been seen this winter.

The number of THE TECH which would otherwise appear on January 30th, will be omitted, on account of the vacation.

President Walker gave the second year men an interesting lecture on "Taxation," which comes in their Pol. Econ. Course.

Lewis E. Johnson, '89, spent part of the Holidays in Boston and Winchester. He is engaged at present with a New Jersey Iron Works.

The Class of '84 Association held their annual dinner at Young's Hotel, Monday,

December 30th, H. D. Bennett was elected Secretary.

An interesting series of lectures on the Discovery and Colonization of America, is being delivered by Mr. John Fiske in the Lowell Institute Course.

"Technique" will not be ready until next term. Wednesday, February 5th, is the day set for its appearance. The price has been increased to seventy-five cents.

F. B. Cole, '88, an assistant in Mechanical Drawing last year, and at present employed as a draughtsman in Cambridgeport, made the Institute a short call recently.

Even when we become alumni do we escape the greedy hand of the subscription fiend? The Alumni Association is now in receipt of its yearly duns. This comes by "degrees."

At the last meeting of the Society of Arts, Mr. James E. Howard, of the Watertown Arsenal, read a paper on The Physical Properties of Iron and Steel at High Temperatures.

The K₂S met at Young's Hotel, Friday, January 10th. Papers were read by S. T. Dow on Coal Tar, by W. H. Collins on Alkaline Chromates, and by G. E. Merrick on Some Experiences in an Alkali Works.

A few generous members of the Class of '92 recently presented Nicholas Theophanis Paraschos with a valuable watch and chain. Mr. Paraschos is a Greek, and is taking Course I. He is prepared to dispense standard time at reasonable rates.

The Class of '92 has the good fortune to be successful in nearly everything it undertakes, and the annual dinner of the Class Society at the Parker House on the last night of the old year was no exception. There were between forty and fifty present, and the principal business of the evening was enthusiastically attended to. A year and a half of boarding-house practice turns out skilled eaters if not

epicures. After President Potter's address, Mr. Whitman, as toastmaster, introduced in turn the speakers for the evening, who responded to the following toasts: Here's to '92, A. F. McCulloch; The Ladies, A. L. Goetzmann; The Faculty, A. G. Davis; Prohibition, F. H. Meserve; Athletics, S. W. Weis; Freshmen, E. L. Andrews; The New Year, H. N. Williams.

The semi-annual exhibition drill of the Corps of Cadets was held at Winslow's Rink, Saturday. The battalion under the command of Major Guppy went through the usual skillful maneuvers which were received with the usual applause. A well devised plan of the Sophomores by which a number of banners inscribed with references to the Moon Island episode and the football game, were to have been unfurled during the drill, allowing a shower of torpedoes to fall from their folds, was circumvented by the watchful Freshmen, and the only attempts at a joke consisted in dropping a bale of hay from one of the galleries and the distribution of some circulars among the audience. Some would-be humorist, however, amused himself by scattering red pepper around the sides of the hall, to the serious annoyance of the spectators. After the drill dancing was in order, and continued until six o'clock.

THE TECH is in receipt of a letter from the management of the Paris Exposition, stating that it has been awarded the commemorative diploma of the Exposition for its exhibition in the college department. The letter is as follows:—

Paris, le 8 décembre, 1889.

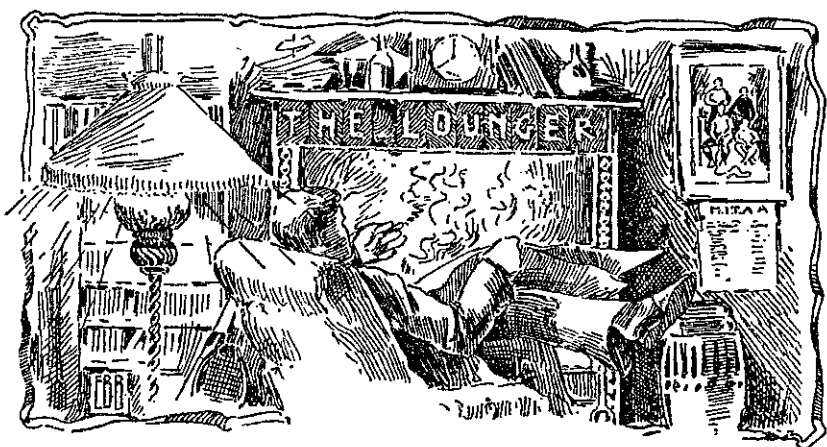
MONSIEUR.—L'Administration du Livre d'Or de l'Exposition Universelle vous a délié le Diplôme Commémoratif de l'Exposition Universelle de 1889.

En vous conférant ce Diplôme, symbole impérissable des labeurs que vous vous êtes imposés, nous désirons perpétuer le souvenir des légitimes récompenses et du succès mérité qu'ont obtenus vos produits dans cet immense Concours International, fête de l'Industrie, de l'Intelligence et de la Paix, auquel tous les peuples de l'Univers ont collaboré.

Veuillez agréer, Monsieur, l'assurance de ma considération la plus distinguée.

Le Directeur,

J. BERKIN.



WITH a firm, confident step, eyes burning with the light of knowledge, and face set in hard, stern resolution, J. C. Grinder, Jr., of Grinderton, Nebraska, approaches the Institute Buildings, and walks boldly forward into the open jaws of the all-devouring Semi-annuals. The final test has come, and the wheels of the great automatic weeding machine are already started. But Grinder never flinches. He walks boldly up the stairs, and with the knowledge of sixty-three hours spent in undivided study over this particular subject, enters the examination room, and quietly seats himself among his fellow-students. The papers are given out, and for two hours and forty-seven minutes Grinder pushes his fountain pen over the surface of the foolscap with never-ceasing energy. One, two, three,—the questions go down before this mighty genius. He does all the problems by seven separate and distinct methods, each of which arrives at the same satisfactory conclusion. The electric car outside runs off the track and smashes into '87's class tree; but Grinder does not lift his eyes from the paper before him. His soul is far removed from material considerations. The sunlight glistens on his long, silky hair, and the dandruff rests on his coat-collar with the airy lightness of the snow on the window-ledge outside. He has not been shaved since Christmas, and, in consequence, a soft down luxuriates on the corners of his face. Of what matter, though, are external appearances? It is the mind of man that is involved in this examination, not the cut of his coat. The fountain pen has reached the last question, and answered it. As in his boyhood's days his father's axe did fell the sturdy trees above his mountain home, so now has his keen edge of knowledge twigg'd the quizzing of his Prof. He hands the attendant master of ceremonies a couple

of reams of closely-written paper, and departs homeward to devour some small truths for the morrow's contest. Great and glorious Grinder! Victory is the reward of your toil. We'll see you again next term.

With trousers turned up out of the mud, eyes burning with the light of having been up all night, and his face set well down into the collar of his ulster, M. Warwhoop Sporter, of Letergo, Georgia, sneaks around the corner of the street, and cautiously approaches the examination room. With the knowledge of the larger part of the subject carefully written on his shirt-front, he, too, quietly seats himself among his fellow students. The examination papers are given out, and a calm surrounds Sporter's chair for several thrilling moments. Then he sharpens his pencil, looks placidly at the Prof., and begins work. Does he turn to his shirt? Not a bit of it. He knows everything that is there, because he spent so much time writing it out and reading it over. Some of it aids him now. He wishes he had made elaborate cribs of everything obtainable on the subject, and then left them at home. Cribs are excellent tutors in their way. One cannot forget all the work that has been put into them. He gets through the first four questions after a fashion, but the fifth is on a matter with which he has never been acquainted.

"So I dreamed that I passed *exam.*,
Till a question posed me sore,"

he quotes. For the sake of a young lady across the street from his house he joined a Browning Club. This is the only one of the poet's thoughts he ever remembered. He remembers the young lady quite distinctly, however, and admires her quite a deal more than he does the poet. Right here the car strikes '87's tree, and Sporter knocks four hats and an overcoat on the floor in his eagerness to see the row. Sporter's soul takes no intellectual flights when there is any prospect of a disturbance about.

There are ten questions on the paper, and Sporter worries though eight of them, using considerable imagination in some of his replies. After an hour and a quarter of this exertion, he hands in the result of his labors, and goes across to the chapel to take a bracer, after such hard work. Success to you, Sporter! We'll see you again next term,—if you return.

College Notes.

The total registration at Michigan University is 2,090.

Marquand chapel at Yale is to have a new organ costing \$2,000.

About \$350 was subscribed at a meeting at Trinity last week with which to inclose the athletic field with a fence. Some \$200 more will be raised.

The entire endowment of Princeton now amounts to \$4,000,000.

Amherst College has an attendance of three hundred and thirty-four,—a decrease of thirty-five from last year.

In the village of Strobeck, Russia, the pupils in the highest grade in the schools are obliged to pass a yearly examination in chess.

The exercises at Wesleyan University on Washington's Birthday, will be more than usually elaborate this year.

C. E. Courtney has made arrangements to coach the Cornell University and Freshman crews this year, and is to begin his work this month, three months earlier than usual. Cornell has never lost a race under his training.

All of last year's Princeton nine have returned to college, with the exception of the left fielder. There are several promising candidates for the position in the Freshman class.

Seven of last year's Cornell crew, which defeated the crews of Columbia and the University of Pennsylvania, together with the coxswain and substitutes, are back at college this year.

Princeton's new baseball cage is nearly completed. The original plan has been enlarged, and the cage will now measure 180 by 60 feet, thus giving plenty of room for the nine and athletic team. The running track will be a large one, with only twelve laps to the mile.

The new cage to be erected by the University of Pennsylvania, will be of corrugated iron on a wooden frame, 100 feet wide by 200

long, with fifteen large, wire-covered windows. A coating of white paint has been put on the interior, to facilitate battery practice, while a well-made track, bath, and dressing rooms will make indoor training a possibility.

The students at Andover have a post-office for their own use in the academy building. It consists of a number of lock boxes, and is managed by a student.

The new grounds of the Olympic Athletic Club, San Francisco, are nearly completed, and \$175,000 of the \$250,000 club-house bonds have been taken.

Andover has decided to devote her football surplus of this season, over \$400, to building a running track, and otherwise improving her athletic grounds.

Cornell has graduated two woman architects. One has a position in an office at Buffalo, and the other will have a fellowship at Cornell for the ensuing year.

Campbell, '90, will captain and train the Williams College baseball nine during the coming season.

The large grounds received by Yale from the estate of the late Joseph E. Sheffield, will be used as a campus for the Sheffield Scientific School, and a portion will be graded and put in first-class condition for athletic purposes.

Pierre de Coubertin, sent by the French government to investigate athletics in American universities, is visiting Yale in the interests of his mission.

The United States has one lawyer to every 909 of the population. France has only one to 4,762 of its population, and Germany one to 6,423 of its population.

Vassar has a dramatic association.

The President of Cornell University shows by a record of the standing of men who engage in the collegiate sports, that such students are, as a rule, stronger both physically and mentally, than are those who do not engage in these exercises.

Candidates for the Oxford and Cambridge crews have begun training for the great boat race in the spring. Oxford has two crews on the water, and Cambridge three.

Of the fourteen students at Barnard College, all but two are specials.

A debate will be held at Princeton on Washington's Birthday, between four men, one from each class. The debate will be on a political question, and a prize of \$50 will be awarded to the best debater.

The rowing tank in the Yale gymnasium has been filled with water, and will soon be ready for use.

There are two hundred and ninety-three students at St. Paul's school this year,—a slight increase in number over that of last year.

Mr. Sumner Yandes, of Indianapolis, has given \$40,000 to endow a professorship of English language and literature in Wabash College.

The candidates for the Columbia 'Varsity tug-of-war team have already begun training in the Columbia grammar school gymnasium.

The Harvard candidates for the Mott Haven team have begun active training.

A fire in the University of Minnesota caused a damage of \$1,500.

The captains of six of the leading preparatory school nines of last year are among the candidates for the Freshman nine at Harvard.

More colleges have been chartered in the past thirty years than in the preceding two hundred and ten years.

Captain Herrick, of the Harvard University crew, has declined a challenge received from Cornell for a four-mile race in the spring.

Harvard and Yale have both refused to row Cornell.

Ex-Minister Phelps has resumed his lectures in the Yale law school.

The recent Diman bequest of \$10,000 to Brown University for the purchase of books is now available for the use of the college.



La Grippe—the beautiful “grip!”

What is it? Where is it?

Ne'er mind; let it slip.

First in your shoulder

And then in your knees;

The pain it grows bolder,
You're tempted to sneeze.

You ache and you quake,
You scarcely can speak;

Like to “cuss,” but feel “wuss,”
And terribly weak;

Your appetite's gone,
You don't feel well yourself;

You look sad and forlorn,
Sort of “laid on the shelf.”

So you cough and you sneeze,
You dose and you swear;

At least my symptoms were these,
And I've been recently there.

“There's that homely Mr. Spriggs. He had his photograph taken by an amateur last summer.”

“Was it good?”

“Very. Insultingly good.”

Handsome Young Doctor: “I can promise you that you will be entirely well in a few days now.”

Interesting Patient (ingenuously): “Oh, doctor, I pray that you will not hasten the matter!”

Though much employed in days ago,
'Tis now ignored and frowned upon;
An outcast, doomed to bitter fate—
The calendar that's out of date.

Palmer: “It's mighty funny, but there are no less than six people with whom I have been talking within a week who are now dead.”

Curtleigh: “I haven't the least doubt of it. I'm sorry I can't stop to listen to you to-day, but the fact is I'm not prepared.”

Little Innocence: “O mamma, look at that man's suit!”

Standing Indignation: “Yes, dear; it looks like an eight-cent check.”



"I THOUGHT YOU SAID JACK'S MOUSTACHE WAS BLONDE."

"YOU MISUNDERSTOOD ME; I SAID HIS CHANCES FOR HAVING ONE WERE VERY LIGHT."

WHAT GLADYS SAID.

Said Gladys, with a smile of bright disdain
(The season is her first; she knows not yet
The sweet and bitter uses of her reign,
The perils in her frowns and dimples set),—

Said Gladys (and I heard her little foot
Beat its impatience on the favored ground,
The while I longed to button up that boot
With kisses from its toe to ankle round),—

Said Gladys (and I listened, who would not?
Watching those lips that might a saint beguile)—
What did she say? Really, I can't tell what—
I'm only certain that I saw her smile.

A MOONLIGHT DRIVE.

She held the reins. I pressed her waist,
And loving words to her I said;
The old horse almost stopped, as I
Asked finally if she would wed.

She held the reins then listlessly,
But when she answered "Yes," she seemed
To grasp them closer in her hands;
Then how the silv'ry, bright moon beamed!

Well, we've been married just a year;
I'd like the single track again;
For since she took the reins that night,
I've never got them back again.